United States Department of Agriculture | Forest Service | Ashley National Forest | Flaming Gorge Ranger District
PO Box 279
Manila, UT 84046

File Code: 1950
Date: May 23, 2002

Dear Friend of the Ashley:

The enclosed Environmental Assessment documents our analysis of a proposal by the Sheep Creek Irrigation Company to rehabilitate the Carter Creek Canal they own and operate under a Special Use Permit on the Flaming Gorge Ranger District. This canal has had a history of breaching. The purpose of this proposal is to strengthen the outside berm of this canal to reduce its potential for breaching.

We welcome your comments on this proposal and the alternatives considered in the assessment. Your comments must be postmarked within 30 days. Legal notice of this assessment is published in the Vernal Express. We expect the notice will be published on May 22, 2002. Please note that all comments received become part of the public record and are available to others upon request.

If you have any questions about the assessment, please contact Ross Catron, District Ecoteam Leader, at (435) 781-5268, or email rcatron@fs.fed.us.

Thank you for your interest in the management of the Ashley National Forest!

Sincerely,

for EILEEN RICHMOND
District Ranger

SHEEP CREEK CANAL (*Carter Creek Portion*) REHABILITATION PROJECT

ENVIRONMENTAL ASSESSMENT

CHAPTER 1
PURPOSE AND NEED FOR ACTION

1.0 Purpose and Need

The Sheep Creek Canal (Carter Creek portion), hereafter referred to as the Carter Creek Canal, delivers water from the three forks of Carter Creek, Weyman Creek and Beaver Creek drainages to the South Fork of Sheep Creek and eventually to an off-site storage reservoir at Long Park (refer to the General Area Map on following page). From Long Park Reservoir the water is delivered to both Daggett and Sweetwater Counties where it is used for irrigation purposes in areas around Manila, Utah. This system of canals, pipelines and Long Park Reservoir is owned and operated by the Sheep Creek Irrigation Company (SCIC) under a Special Use Permit by the Ashley National Forest.

The Carter Creek canal has had a history of past breaches where resource damage to adjacent lands has occurred. The breach shown below occurred in 2000 on the portion of the canal leaving Lily Pad Lake.

Photo 1 Breach below Lily Pad Lake, 2000

There are two reasons for this. First, the outside berm of the canal is inadequate to contain canal flows (refer to Appendix A). Additionally there are some areas where leaks through the outside berm have led to canal failure.

The second reason is that there has been an inadequate level of permittee inspections in the operation and maintenance of the Carter Creek canal.

Photo 2 Resource damage from breach below Lily Pad Lake, 2000

Where the canal breaches have occurred there have been areas of resource damage. This is shown in the adjacent photo of the Lily Pad Lake canal breach in 2000.

Damage can be extensive with scouring at the breach point, where both the outside berm and the canal itself have eroded away. By rehabilitating the Carter Creek Canal (reconstructing the outside berm to the designs shown in Appendix A), it is expected that the canal would be less likely to breach and the potential for resource damage would be reduced. Any costs to accomplish this would be the responsibility of SCIC.

To address the second reason for canal failures the Forest Service will require the SCIC to begin stringent new operation and maintenance procedures that will require more frequent inspections of the canal. This administrative action is being taken through SCIC's existing Special Use Permit. Since this is an administrative action it will not be considered further in this analysis (refer to Section 2.0).

Improvements are needed to:

- Minimize the risk to forest resources and users from future canal failures.
- Bring canal sections and features up to a maintainable standard.

Improvement actions need to:

- Recognize inherent risks in the canal operation and build in reasonable measures to prevent future damages.

1.1 Proposed Action

The Ashley National Forest is proposing to require SCIC to rehabilitate the Carter Creek Canal. The following actions are proposed to bring this canal to an acceptable standard that would be less likely to breach:

- *Use heavy equipment to move the canal into the hillside approximately 5-10 feet where necessary to allow for the construction of additional outside berm width along an estimated eight miles of this ten-mile long canal. This would widen the outside berm of the canal from essentially a narrow ridge to a flat surface of 8-10 feet in width while maintaining approximately three feet of outside berm above high water (refer to typical cross-section design in Appendix A). Construction activities would begin during August or September, 2002 and would take an estimated two to four months to complete.*

- *Remove existing woody vegetation (root wads included) from the outside berm and upslope of the canal wherever the canal would be moved into the hillside. The resulting slash (woody vegetation and roots wads) would be lopped and scattered to aid in soil protection and non-woody vegetation reestablishment, or where necessary piled and burned. Clearings may need to be created or enlarged for safe burning areas.*

- *Line or pipe up to 2,000 feet of the 54,400 feet total length (~4%) of the canal through areas with a potential for breaching which could not be repaired through the reconstruction of the outside berm.*

- *Raise approximately 300 feet of the natural bank at Lily Pad Lake to provide three feet of freeboard.*

This proposal is intended to reduce the potential for canal breaching and reduce the risk resource damage. It is not intended to increase or decrease the flows in the canal.

1.2 History of Canal and Current Situation

The Carter Creek Canal is a part of the larger Sheep Creek Canal system. Water from the Carter Creek Canal drains into the South Fork of Sheep Creek, and then into Sheep Creek where it is immediately diverted, along with water from Sheep Creek, into the Main or Feeder Canal. The Main Canal then flows approximately six miles into Long Park Reservoir, which is an off-site storage reservoir (refer to General Area Map). From Long Park Reservoir the water flows in a pipeline down Sols Canyon where it leaves the Forest and is used for irrigation purposes.

The Carter Creek Canal was constructed in two phases. The lower section, from Sheep Creek (below Hickerson Park) south to Lily Pad Lake, was completed in 1954. An extension to Tepee Lakes was completed in 1960. The total length of the canal is approximately 10.3 miles. The canal has evolved by cut and fit methods to what is presently in place. The existing cross-sections of the canal are displayed in Appendix A, which is the Natural Resources Conservation Services proposed design of the project.

The Carter Creek Canal begins at Tepee Lakes where it diverts a portion of the outflow into the canal. From Tepee Lakes it collects water from all the streams that it crosses. Beginning each year during May or June water from each of these drainages is 100% diverted into the canal until October or November when water in each stream is allowed to bypass the canal. Valid State of Utah water rights are in place for these diversions to occur. During periods of high runoff some amounts of water are bypassed through the canal or are not diverted.

A key feature of the Carter Creek Canal is that it also travels through Lily Pad Lake (refer to Alternatives Map in Section II). This lake is perched on the edge of a glacial moraine. The natural bank around Lily Pad Lake is approximately one foot higher than the lake level along about 300 feet of its northwest bank. Until the early 1990s water from the canal flowed into the lake and then down a steep pipeline several hundred feet to the canal below on the lake's north bank. However, in the early 1990s this pipe began to fail and a new outlet was constructed from the lake into a natural drainage west of the lake. Water now flows from the lake into this natural drainage and then down to the canal.

Since the canal generally diverts most of the water that it intercepts, stream drainages immediately below the canal have little, if any, running water. However, riparian vegetation and moist areas are common. Most flows begin to aggregate immediately or within several hundred feet of the canal, and within 500-1,000 flows are again capable of supporting a fisheries.

Deep-rooted vegetation along the canal, primarily Lodgepole pine, provides a potential source of breaching since water can pipe through the canal berm along roots or where roots have decayed and gradually erode the outside berm. Lodgepole pine and other deep-rooted species can also fall into the canal and block flows until the canal is over topped. Trees along the outside berm have been allowed to become established and create the potential for future breaches. In some locations during the original construction trees were partially buried in the toe of the outside berm creating a weak spot in the canal creating a potential for failure. Beaver activity has also contributed to the potential for canal failures.

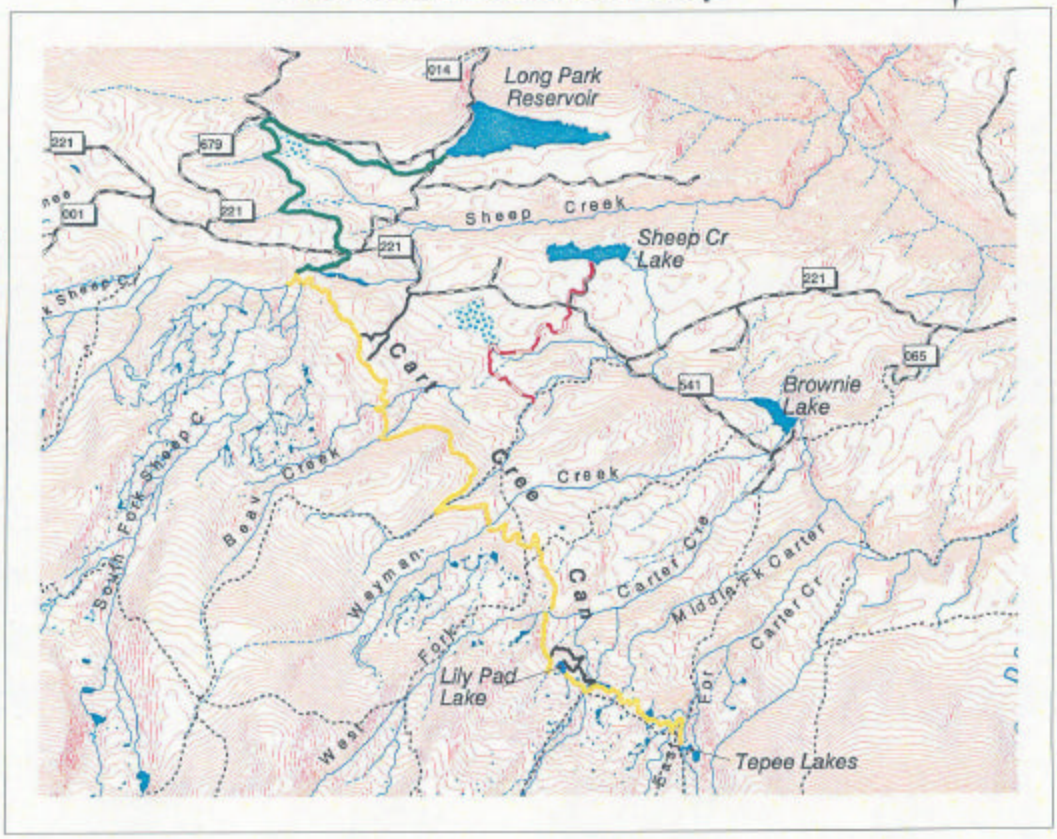
A field condition survey of the canal completed in 2000 identified 12 recognizable past breaches. Additional breaches or canal over-toppings that caused only minor damage were also present but were not noted. During the previous three years, three breaches causing resource damage to the surrounding land and streams have occurred. (Louis W. Wasniewski, Sheep Creek Canal Condition Survey, 6/2000).

1.3 Forest Plan Direction

The Ashley National Forest Land and Resource Management Plan (Forest Plan) describes the desired condition of the Forest and allocates land into Management Areas. Management Areas are defined by the resource(s), which could be optimally produced from a piece of ground given a set of variables. Each Management Area is described by a prescription, which may emphasize one resource over others. Resource goals, objectives, standards and guidelines provide managers a set of parameters, which guide implementation of projects on the ground.

The Sheep Creek Canal traverses through three Forest Plan Management Areas, Areas 'g', "f" and 'n'. The objective of Management Area 'g' is to provide undeveloped dispersed recreation in an un-roaded environment. Criteria and assumptions for area 'g' preclude scheduled timber harvest and road construction. Management Area 'f' has an objective of dispersed recreation roaded. Management Area 'n' has an objective of allowing a range of resource uses and outputs with commodity production modified for amenity production. While no traditional use is precluded by this prescription, one of its basic assumptions is that commodity production will be

Carter Creek Canal
General Location Map



- Main Sheep Creek Canal
- Carter Creek Canal
- Sheep Creek Lake Canal (UDWR)

Roads & Trails
- Trail
- Improved Dirt CL 3
- Access Roads

Water Bodies
- Perennial Lake/Reservoir
- Marsh/Swamp

Water Courses
- Perennial
- Intermittent
- Disappearing

Contours (40 feet)

N

2 0 2 4 6 Miles

User needs to exercise caution regarding the accuracy of these data. The source scales and vintage can vary. The USFS provides no warranty, nor accepts any liability from any incorrect, incomplete, or misleading use of these data. These data may be updated at any time without notification

B.W.T. (05/14/2002)